

Applicant : Konstantin V. Rodyushkin et al.
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Attorney's Docket No.: 10559-0831001 / P16146

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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-26. (Cancelled)

27. (Currently Amended) A computer-implemented method comprising:
using a processor to perform the steps of:

receiving a first digital image in a sequence of digital images and eye and mouth coordinates;

outputting eye and mouth coordinates on a subsequent digital image in the sequence of digital images; and

computing transformation parameters that represent a transformation from a base face model for the first digital image to a subsequent deformable model for the subsequent digital image;

wherein receiving comprises estimating the base face model, denoted Mb, and the base face model's transformation parameters, denoted T', by the eye and mouth coordinates;

wherein outputting comprises:

calculating an initial model, denoted M, for the subsequent digital image as a transformed base model Mb using the transformation parameters T',

rotating the subsequent image to the first digital image, denoted I(x,y), to generate a normalized model of the initial model M;

calculating a horizontal and vertical gradient map on the rotated image; and

estimating new transformation parameters, denoted T*, by minimizing an energy function $E(T, I(x,y))$ representative of the goodness of fit between the transformed model

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and the corresponding digital image, and of the optimality of the new transformation parameters, where T^* corresponds to the complex argument of the minimum of the energy function, denoted $\arg \min T E(T, I(x, y))$.

28-30. (Cancelled)

31. (Previously Presented) The method of claim 27 in which minimizing comprises a downhill simplex method with initial transformation parameters $T = T'$.

32. (Previously Presented) The method of claim 27 further comprising calculating the eye centers and the mouth corners by the transformed base model using the transformation parameters T^* .